

NCRAR Newsletter

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SPECIAL POINTS OF INTEREST:

- **Article by Jim Henry Ph.D. & Paula Meyers Ph.D. "Tinnitus Rehabilitation Through Education"**
- **NIH-Funded Pre-doctoral Summer Research Training Program to begin at NCRAR in the summer of 2007**

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Message from the Director: Stephen Fausti Ph.D.

A major focus of the NCRAR is to cultivate the next generation of auditory researchers through education and mentoring programs. To this end the Center has recently expanded its education division, in part by appointing Gabrielle (Gaby) Saunders Ph.D. to the role of Deputy Director for Education and Outreach. The program has three main goals: 1) to educate health professionals; 2) to provide education and outreach to the community, in particular to the veteran population and patients both locally and nationally, and 3) to provide educational opportunities for audiological researchers. To this end we hold a biennial conference and a monthly seminar series (details on Page 4). We are developing web-based training programs for VA audiologists to learn tinnitus management techniques, and for VA medical staff to learn how to improve their interpersonal communication with individuals with hearing impairment and how to adapt hospital wards and clinics to improve the listening environment. We have a summer research experience program for Au.D. students (see Page 3 for more information), and an externship program for Au.D. students, and we have summer internships for high school and undergraduate students eager to learn about research before starting their careers. A description of how these programs are to be expanded will be given at the upcoming Association of VA Audiologists meeting in Denver CO. We will be describing how the NCRAR will mentor and collaborate with VA auditory research scientists and clinicians wanting to conduct research and seeking information to improve their clinical practice. We also publish and post on our website informational leaflets for veterans and the general public about hearing-related issues. I hope you will attend our upcoming conference and look at our website for educational opportunities and downloads: www.ncrar.research.va.gov



Tinnitus Rehabilitation Through Education by Jim Henry Ph.D. and Paula Myers Ph.D.

The main purpose of the VA National Center for Rehabilitative Auditory Research (NCRAR) is to conduct research that will result in improved clinical techniques for the rehabilitation of veterans with auditory disorders. Most of this research focuses on hearing loss and the many intricacies that must be addressed to restore normal hearing ability. Additional research addresses the "other" auditory disorder—tinnitus.

Tinnitus is far more common than most people realize. Up to 50 million Americans experience tinnitus according to the American Tinnitus Association, including up to 4 million U.S. military veterans (Henry, Schechter, Regelein, & Dennis, 2004).

Most tinnitus experts agree that of all the people who experience tinnitus, about 20% require some degree of clinical care, which equates to about 10 million Americans and

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General information

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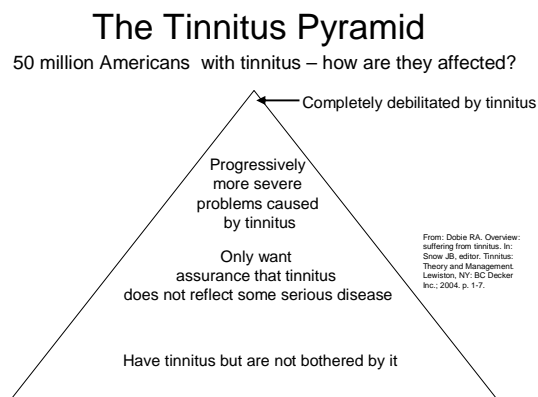
Tinnitus Rehabilitation through Education (continued from Page 1)

800,000 veterans. However, most clinics and hospitals do not have a tinnitus management program. Those few that provide services do not adhere to any guidelines or standards because there is no standard of practice for the clinical management of tinnitus.

What can be done to provide quality clinical care for the 10 million Americans and 800,000 veterans who have problematic tinnitus? At the NCRAR a partial solution is being developed that relies mainly on the development of tinnitus educational materials.

How can education provide clinical care for people with tinnitus? The Tinnitus Pyramid shown below can help to answer this question. The Pyramid contains the 50 million Americans who experience tinnitus, and shows how tinnitus affects them differently (Dobie, 2004).

- The **base** of the pyramid contains the majority of people with tinnitus who are *not bothered* by the tinnitus.
- The **middle** of the pyramid contains those who only need *assurance that their tinnitus does not reflect some serious disease*.
- Toward the top of the pyramid are people with *progressively more severe problems* caused by tinnitus.
- The tip of the pyramid contains those who are *completely debilitated* by their tinnitus.



For people who have a severe tinnitus problem, there are methods of individualized, long-term treatment available. However, most people who require clinical care for their tinnitus just need basic information to resolve most or all their tinnitus concerns. The key, then, is to develop educational

materials that can provide this basic information. This is a focus of the NCRAR.

The NCRAR has participated in the following tinnitus education projects:

- A randomized clinical trial was completed to evaluate the efficacy of group education for tinnitus (Henry et al., 2007). The education group showed significantly more benefit than the other two groups (support group and no-treatment group).
- A professional-quality tinnitus-education video for veterans was developed. The entertaining video provides important self-help information about tinnitus.
- A tinnitus brochure for veterans was developed.
- A series of four videos was produced that demonstrates group educational counseling based on Tinnitus Retraining Therapy. The videos are available to interested VA audiologists to use as a model for discussion with appropriate patients.
- A tinnitus FAQ (Questions and Answers About Tinnitus) was written and posted on the VA Audiology and Speech Pathology website: <http://vawww1.va.gov/audiospeech/>
- A chapter on tinnitus was revised for the Veteran Health Initiative Hearing Impairment module that is being developed for interdisciplinary online learning.
- A tinnitus-education booklet for veterans is being developed.
- Comprehensive online training is being developed for VA audiologists to learn tinnitus

(Continued on. on p3 opposite)

NIH-funded Pre-Doctoral Summer Research Training Program

The NCRAR has been awarded a five-year T-35 Predoctoral Short-term Training Grant from the National Institute on Deafness and other Communicative Disorders at NIH. The grant provides funds for a summer research experience for up to four Au.D. students. The Au.D. degree is a 4-year post baccalaureate degree that is designed to meet all requirements for national accreditation and clinical certification in audiology.

The goal of this NIH funding is to encourage Au.D. students who plan clinical audiology careers to consider clinical research, or at least to be immersed in research

for a short time during their graduate studies.

The NCRAR will begin the training program in the summer (2007). The award provides a stipend for up to 4 students from Au.D. programs around the country to come to the NCRAR for an intensive 2 to 3 month research experience. Each student will have the opportunity to work in one or two labs with established NCRAR investigators. In addition, the students will participate in journal discussion groups, attend meetings of NCRAR investigators to discuss ongoing projects, participate in bi-weekly discussion

on topics related to the ethical practice of research, and will have informal discussions with professional scientists on staff and at the Oregon Health and Science University, our medical school affiliate. At the end of the experience the students will make a formal presentation to the NCRAR staff about their research experience.

For further information about the program see our website:

www.ncrar.research.va.gov

Tinnitus Rehabilitation through Education (continued from Page 2)

management techniques.

Tinnitus is recognized by VA as a disability, and VA needs a standardized clinical program to manage tinnitus for veterans who have service-connected tinnitus. The development of educational materials and programs is the most efficient way to address the needs of the majority of these veterans. Such development requires a relatively small investment of time and effort to create effective resources for VA-wide use.

We continue to work toward the goals that (a) a standard of care or best practice model of tinnitus management is accepted by VA; (b) VA audiologists will be trained in the management of tinnitus; and (c) veterans who complain of tinnitus will routinely receive tinnitus educational materials and/or group tinnitus self-management education. Education can lead the way in providing these rehabilitation services

for veterans with tinnitus.

References

Dobie, R. A. (2004). Overview: suffering from tinnitus. In J. B. Snow (Ed.), *Tinnitus: Theory and Management* (pp. 1-7). Lewiston, NY: BC Decker Inc.

Henry, J. A., Loois, C., Montero, M., Kaelin, C., Anselmi, K. A., Coombs, R., et al. (2007). Randomized Clinical Trial: Group Counseling Based on Tinnitus Retraining Therapy (in press). *Journal of Rehabilitation Research and Development*, 44(1).

Henry, J. A., Schechter, M. A., Regelein, R. T., & Dennis, K. C. (2004). Veterans and tinnitus. In J. B. Snow (Ed.), *Tinnitus: Theory and Management* (pp. 337-355). Lewiston, NY: BC Decker, Inc.



Jim Henry Ph.D. is an NCRAR Research Career Scientist, and Associate Professor at the Department of Otolaryngology, Head & Neck Surgery at Oregon Health & Science University (OHSU) in Portland. His research focuses on the development, evaluation, and documentation of methods for tinnitus clinical management.



Paula Myers Ph.D. is the Chief of the Audiology Section and Cochlear Implant Coordinator at the James A. Haley VAMC in Tampa, Florida and is Chair of the local Patient Education Written Resource Committee, VISN 8 Patient Education Workgroup member, Chair of the Southern Regional Professional Standards Board, Assistant Professor at University of South Florida, and Chair of the National Audiology Patient Education Workgroup.

Upcoming NCRAR Events

April 5th: DoD Hearing Conservation working group meeting at NCRAR

April 13: NCRAR Research Seminar. **Paula Myers, Ph.D.**, Dept. Audiology, James A. Haley Veterans' Hospital Tampa FL. *Polytrauma and Audiology at the VA.*

May 1: Early registration for NCRAR conference begins.

May 11th: NCRAR Research Seminar. **George Frye.** Frye Electronics, Tigard, OR. *Acoustic reflections. Measurement and Control.*

June 1: Deadline for poster submissions and scholarship applications for the NCRAR conference

June 13: NCRAR Research Seminar. **Bill Noble Ph.D.** School of Psychology, University of New England, Australia.

Residual disabilities and handicaps following unilateral and bilateral cochlear implanting.

NOTE: THIS SEMINAR WILL TAKE PLACE AT 12pm IN THE PVAMC AUDITORIUM 2nd FLOOR, BUILDING 100

June 13: NCRAR Research Seminar. **Bill Noble Ph.D.** School of Psychology, *Physiology and phenomenology of tinnitus.*

NOTE: THIS SEMINAR WILL TAKE PLACE AT 4pm IN THE NCRAR CONFERENCE ROOM

June 15: NCRAR Research Seminar. **Joshua Miele Ph.D.**, Smith-Kettlewell Eye Research Institute, San Francisco CA.

July 13: NCRAR Research Seminar. **Christopher Stecker Ph.D.** University of Washington, Seattle. *Sound localization and binaural discrimination of high-frequency click trains: implications for bilateral cochlear implant users.*

August 17: NCRAR Research Seminar. **Terry Chisolm Ph.D.**, Department of Communication Sciences & Disorders, University of South Florida.

September 1: Early registration for NCRAR conference ends.

September 27-28: NCRAR Biennial conference: Hearing Therapies for the Future.

October 12: NCRAR Research Seminar. **Arthur Boothroyd Ph.D.**, Distinguished Professor Emeritus City University of New York, NY & Scholar in Residence San Diego State University CA.

Unless otherwise noted, all NCRAR seminars are held in the NCRAR Conference Room, P5F-154 from 12PM—1PM.

NCRAR News

Recent Seminars

Kelly Tremblay, Ph.D. from University of Washington, Seattle, presented a seminar titled "*Hearing aids and the brain: What's the connection?*" on January 19th 2007.

Pamela Souza, Ph.D., from University of Washington, Seattle, presented a seminar titled "*It's all in your ears: But is it the hearing aid or the hearing loss?*" on February 16th 2007

Mary Cord, Au.D., Walter Reed Army Medical Center, Washington DC presented a seminar titled "*Field Evaluation of an Asymmetric Directional Microphone Fitting*" on February 26th 2007

William Martin, Ph.D., Dept. Otolaryngology/Head & Neck Surgery, Public Health and Preventive Medicine, Oregon Hearing Research Center, Portland. Presented a seminar titled "*Something fun from the realm of computational physics: Intracranial inhomogeneities as generators of far-field evoked potentials. AKA: When it comes to scalp-recorded potentials, what makes a bump?*" on March 16th 2007

Other News

Peter Jacobs received a Mentored Student Scholarship to present a poster titled "Correlating Forward Masked SFOAE with Blood Glucose" at the American Auditory Society conference in March 2007

Patrick Helt served as Executive Secretary for an RR&D Merit Review Board plenary session on March 5, 2006 in Washington, D.C., and completed the NCRAR Calendar Year 2006 Annual Report for VACO.

NCRAR Conference Update

Information, instructions and application forms for scholarships to attend the upcoming NCRAR conference 'Hearing Therapies for the Future' (September 27th & 28th 2007) are available online at

www.ncrar.research.va.gov

Also available online is a preliminary program and information about poster submissions.

Meet Marjorie Leek, Deputy Director of Research

Dr. Marjorie Leek came to the NCRAR in the Fall of 2005, after serving many years as a Senior Researcher at the Army Audiology & Speech Center, Walter Reed Army Medical Center in Washington, DC. She was drawn to Portland by the exciting growth of the NCRAR, as well as the opportunities for stimulating intellectual interactions among the scientists here and at other institutions in the area. Upon her arrival, she quickly became immersed in the life of the National Center and has continued her active and productive research career.

Marjorie says the thing she likes the best about the NCRAR is the mix of people – many scientific disciplines, all ages and stages in their careers, with a wide variety of technological and intellectual skills and interests. She particularly appreciates that they all have a loyalty and trust for each other, confidence in their abilities, and take joy in the successes of the Center and all its staff. Says Marjorie “At the risk of sounding like a “Pollyanna”, I love coming to work every morning, knowing that the day is likely to bring new opportunities for professional growth, possibly new

understanding and knowledge, or simply good conversation and comradeship with people I like.”

Marjorie earned her Ph.D. from the University of Kansas in Speech and Hearing Science. From there, she went to the Boys Town Institute (now called the Boys Town National Research Hospital) for postdoctoral training with Dr. Charles Watson. She was on the faculties of Arizona State University and the University of Minnesota before accepting her full-time research job at Walter Reed. She is an eager collaborator, and has long-standing research collaborations in place with researchers at the University of Maryland as well as several other universities around the world.

Marjorie has been a productive researcher in the area of the functional effects of hearing loss on people's abilities to understand speech and to enjoy music and hear environmental sounds. She has enjoyed continuous funding from the NIH for this research for nearly twenty years. In addition to her research, she has been an Associate Editor of the Journal of the Acoustical Society of America, has served on many NIH grant review panels, and maintains an active involvement in conferences and publication on hearing and hearing loss.

One of Marjorie's greatest satisfactions is the work she has done with new scientists just coming into their



research careers. She has served as a mentor to several post-docs over the years, and feels her own interests have expanded and her research gained in depth due to their contributions in her lab. She is the Principal Investigator on a new NIH training grant awarded to the NCRAR that will provide summer research experiences to clinical graduate students in audiology. The NCRAR hopes to provide an enriched understanding of research in their chosen discipline to students who will be the clinical audiologists of the future.

Marjorie enjoys spending time with her extended family, many of whom live in the Pacific Northwest, loves to travel with her friends, and dabbles in gardening and playing her piano.

Newly-funded NCRAR Research (12/06-3/07)

Michelle R. Molis, Ph.D. Perception of Ambiguous Vowels in Background Noise by People with Hearing Loss. 12/01/06-11/30/07 OHSU Medical Research Foundation Early Clinical Investigator Grant

Gabrielle Saunders Ph.D. received a Portland VA Medical Center Education Initiative award to

develop two educational web-based programs for medical staff. The web-based programs will provide information about improving interpersonal communication between medical care providers and individuals with hearing impairment, and on adaptations that can be made to the hospital wards/clinic environments to improve the listening environment.

Pre-Doctoral Summer Training Program in Auditory Research
Marjorie R. Leek, Ph.D. NIH (NIDCD), 4/1/07-3/31/12. The award will provide funding for up to 4 Doctor of Audiology student (Au.D.) to spend 3 months at the NCRAR during the summer to obtain research experience.

NCRAR Presentations & Publications 12/06-3/07

PUBLICATIONS:

Best, V., Gallun, F., Carlile, S. and Shinn-Cunningham, B. Binaural interference and auditory grouping," *Journal of the Acoustical Society of America*, 121(2), 1070-1076.

Henry JA, Rheinsburg B, Owens KK, Ellingson RM. New instrumentation for automated tinnitus psychoacoustic assessment. *Acta Oto-Laryngologica Supplement*, 126:34-38, 2006

Henry JA, Schechter MA, Zaugg TL, Griest S, Jastreboff PJ, Vernon JA, Kaelin C, Meikle MB, Lyons KS, Stewart BJ. Clinical Trial to Compare Tinnitus Masking and Tinnitus Retraining Therapy. *Acta Oto-Laryngologica Supplement*, 126:64-69, 2006

Saunders GH, Forsline A. The Performance-Perceptual Test (PPT) and its application to hearing aid counseling. *Hear Rev*, 2006, 13(13) 18-25.

Saunders GH. Considerations for selecting and fitting hearing aids for older adults. *ASHA Perspectives Newsletter*, 2006, (in press).

Saunders GH, Forsline, A & Jacobs, P. (2007) Attitudes toward Loss of Hearing Questionnaire (ALHQ): A comparison of electronic and paper formats. *Journal of the American Academy of Audiology* 18(1), 66-77

Yueh B, Collins MP, Souza P, Boyko E, Loovis C, Heagerty P, Liu CF, Fausti SA, Hedrick S. Screening for auditory impairment—Which hearing Assessment test [SAI-WHAT]: RCT design and baseline characteristics. *Contemporary Clinical Trials*, 2006, (Aug 30th).

Submitted manuscripts:

Durlach, N.I. and Gallun, F.J. "Theory construction in auditory perception:

Need for development of teaching materials" *Journal of the Acoustical Society of America*.

Saunders, GH & Echt KV. Rehabilitation Strategies for Dual-Sensory Impairment. Submitted to *Trends in Amplification*.

PRESENTATIONS:

Best, V., Stupin, L., Gallun, F., Carlile, S., and Shinn-Cunningham, B.G. (2007) "Sequential Grouping Influences Binaural Interference" *Assoc. Res. Otolaryngol. Abs.*: 902.

Dent, M., McClaine, E., Shinn-Cunningham, B., Best, V., Ozmeral, E., Narayan, R., Gallun, F., and Sen, K. (2007) "Spatial Unmasking of Birdsong by Budgerigars and Zebra Finches" *Assoc. Res. Otolaryngol. Abs.*: 909.

Fausti, S.A., Gallun, F.J., and Leek, M.R. "VA Service and Compensation Costs: Supporting 'Readiness For Life', 46th Annual Navy Occupational and Preventive Medicine Conference in Hampton VA, March 21, 2007.

Gallun, F.J. Communication in Complex Environments: On the Role of Binaural Release from Informational Masking. University of Washington, SPHSC Colloquium, March 9, 2007.

Gallun, F.J. Exploring the role of modulation sensitivity in speech perception.

Center for Spoken Language Understanding, Oregon Graduate Institute, Portland, March 20, 2007.

Gallun, Frederick J. Central Auditory Processing Disorders and Polytrauma. Dartmouth Polytrauma Conference, Hanover, NH, December 3-5, 2006.

Gallun, F.J., Durlach, N.I., Colburn, H.S., Shinn-Cunningham, B.G., Best,

V., Ihlefeld, A., Mason, C.R., and Kidd, G., Jr. (2007) "Binaural Release from Masking for a Tone in Noise and in Multitone Maskers" *Assoc. Res. Otolaryngol. Abs.*: 437.

Henry JA. "Crash Course in Tinnitus Management." Wisconsin Speech-Language Pathology and Audiology Professional Association 2007 Convention. February 9, 2007. (invited half-day training workshop)

Jacobs PG, Wan EA, Konrad-Martin D, Fausti SA (2007). Correlating Forward Masked SFOAE with Blood Glucose in Diabetic Subjects. Poster presented at the American Auditory Society in Scottsdale, Arizona, March 4-6, 2007

Konrad-Martin D, Phillips DS, Reavis KM, Gordon JS, Helt WJ, Bratt GW, and Fausti SA (2007). Evaluation of Audiometric Threshold Shift Definitions for Ototoxicity Monitoring. Poster presented at the American Auditory Society in Scottsdale, Arizona, March 4-6, 2007

Lewis, M.S., Hutter, M., Lilly, D., Bourdette, D., Fitzpatrick, M., & Fausti, S. (2007, March). Some effects of multiple sclerosis on the dichotic digits test. Poster to be presented at the American Auditory Society Annual Meeting, Scottsdale, AZ.

Meikle M, Henry JA, Griest S, Stewart B. "Perceptual components of tinnitus severity." *Assoc Res Otolaryngol Abstr*:156, February, 2007. (poster)

Melamed, S., Chambers, R, and Allen, J.. Potential Objective Measures of Tinnitus. Poster presented at the American Auditory Society Annual Meeting, Scottsdale, Arizona, March, 2007